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THE STATE UNIVERSITY OF IOWA.

The head of the school system of the state was provided for by a statute enacted by the First General Assembly in February, 1847, in accordance with the constitution of the state adopted in the previous year. As at present organized the University comprises the following departments:

THE COLLEGIATE DEPARTMENT.

THE LAW DEPARTMENT.

THE MEDICAL DEPARTMENT.

THE HOMŒOPATHIC MEDICAL DEPARTMENT.

THE DENTAL DEPARTMENT.

THE PHARMACY DEPARTMENT.

THE COLLEGIATE DEPARTMENT.

Students are admitted to this department from most of the high schools of the state without examination. The curriculum embraces four general courses of study, the classical, two philosophical, the general scientific; and two technical courses, the course in civil engineering, and the course in electrical engineering.

There is no preparatory school connected with this department. During the year 1893-94, there were thirty-four professors and assistants engaged in the work of instruction in this department, and the number of students enrolled was four hundred and twenty-six.

LAW DEPARTMENT.

The course in this department extends over two years of nine months each, and on its completion the degree LL. B. is conferred.

During the past year instruction was given by four resident professors, who spend their entire time in that work, and by four lecturers of distinction in the various branches of law.

The number of students enrolled in 1893-94, was two hundred.

THE MEDICAL DEPARTMENT.

The course in this department requires three sessions of six months each, and on its completion the graduates receive the degree M. D., and are entitled to registration by the State Board of Medical Examiners.

During the year 1893-94, instruction was given by twenty-one professors and assistants, and the number of students enrolled was one hundred and sixty-eight.

(Continued on page 3 of cover).

TENTH ANNUAL ANNOUNCEMENT
OF THE
DEPARTMENT OF PHARMACY
OF THE
STATE UNIVERSITY OF IOWA
IOWA CITY, IOWA

1894-95

PUBLISHED BY THE UNIVERSITY
1894

DEPARTMENT OF PHARMACY.

FACULTY.

CHARLES A. SCHAEFFER, A. M., PH. D., LL. D.,
President.

EMIL L. BOERNER, PH. G.,
Professor of Pharmacy, Director of the Pharmaceutical Laboratory,
and Dean of the Faculty.

LAUNCELOT W. ANDREWS, PH. D.,
Professor of Chemistry, and Director of the Chemical Laboratory.

THOMAS H. MCBRIDE, A. M.,
Professor of Botany, and Director of the Microscopical Laboratory.

CHARLES S. CHASE, M. D.,
Professor of Materia Medica.

E. W. ROCKWOOD, A. M.,
Lecturer in Toxicology.

BOHUMIL SHIMEK, C. E.,
Instructor in Botany.

PERCY H. WALKER, A. M.,
Instructor in Chemistry.

JOHN M. BERNHARDT, PH. G.,
Assistant in Pharmacy.

DEPARTMENT OF PHARMACY.

The Department of Pharmacy of the State University of Iowa is designed to furnish pharmacists, and those desiring to engage in pharmacy, an opportunity to acquire a thorough practical education in the departments of science most intimately connected with the practice of that profession. A technical education, such as that offered by the Schools of Pharmacy, and seldom if ever acquired in drug stores, is as necessary to the accomplished pharmacist as is the special training of a medical course to the physician. The day is not far distant when the pharmacist who is not provided with the evidence of skill which the college diploma furnishes, will labor under equal disadvantages with the non-graduated physician of to-day.

The experience of the past nine years has thoroughly demonstrated the practicability of the courses in this Department, as shown by the readiness with which students of even one session find employment in drug stores, at salaries much higher than they could possibly command without the college training. Incidentally, the courses are well calculated to aid those who desire specially to qualify for the examinations of the State Board of Pharmacy.

The tenth annual course of lectures will begin on Wednesday, September 19th, 1894, and close on Wednesday, March 13th, 1895. There will be a vacation commencing December 23d, 1894, and ending January 1st, 1895.

BUILDING.

This school is now comfortably located in a new three story building, specially erected at a cost of about fifty thousand dollars, and furnishing about twenty-five thousand square feet of floor space, perhaps the largest accommodations in the way of room enjoyed by any school of pharmacy in this country. The equipment of this building is of the most modern, and in keeping with the advancing stage of the science. Through liberal appropriations periodically

made by the Legislature and the Board of Regents, the accumulated equipment of some years is being rapidly enlarged, and affords excellent facilities for instruction. The lecture rooms are provided with all desirable conveniences for class demonstration, and with large tablet chairs. The laboratories are especially roomy, the chemical and pharmaceutical laboratory occupying each a floor space of 54x140 feet, divided into two large general, and a number of smaller special laboratories. Two forty-horse power boilers supply the steam for all purposes, and a seven horse-power gas engine furnishes the power for drug mill, dynamo, etc.

PRELIMINARY EXAMINATION.

Every applicant for admission to the Junior class will be required to pass a preliminary examination in English, penmanship, geography, and arithmetic, or give satisfactory evidence of having completed such studies in a grammar school.

Admission to the Senior class will be by examination in the branches of study taught during the Junior year. Students presenting evidence of having passed the Junior examination in another recognized college of pharmacy will be admitted without further examination.

THE COURSES OF INSTRUCTION

embrace lectures on pharmacy, materia medica, pharmacognosy, botany, chemistry, and toxicology, with practical work in pharmaceutical, microscopical, and chemical laboratories, and almost daily recitations during the term.

About two hundred and twenty-five lectures are delivered annually to the Junior class, and more than four hundred hours are devoted to practical work in the several laboratories and to recitations.

Following the wise precedent established a few years ago by some of the leading colleges of pharmacy, the graded course has been adopted. The full course will extend over two years, and the students will be divided into Junior and Senior classes, composed of first and second course students, respectively. This arrangement, while adding greatly to the labors of the Faculty, will prove of great benefit to students, by enabling the Professors not only to introduce new and profitable subjects in their departments, but by extending their lectures over two sessions, to take up the elementary work during the first, and the more advanced during the second year.

THE COURSE IN PHARMACY.

PROFESSOR BOERNER.

The introductory lectures to the Junior class will embrace a short review of the pharmacopœias of the United States, England, France, and Germany; the various systems and appliances of weights and measures in use by the leading nations; the apparatus and methods necessary for the determination of the specific gravity of solids and liquids, and the sources and management of heat for pharmaceutical purposes. These will be followed by descriptions and illustrations of apparatus necessary to properly conduct the processes of percolation, filtration, comminution, sifting, solution, precipitation, neutralization, evaporation, distillation, sublimation, etc.

The official drugs will be considered by groups, the classification being based upon the more prominent proximate constituents contained in the drugs under consideration, beginning with those substances containing prominently lignin, and passing in order to those containing starches, sugars, gums, resins, oleo-resins, fixed oils, volatile oils, alkaloids, glucosides, neutral principles, etc.

All the preparations of a drug will be considered together. To aid the student in memorizing the strength of official preparations, these will be considered by pharmacopœial classifications.

The lectures to the Senior class will begin with a short review of the subjects embraced in the Junior course, followed by a critical study of the preparations of the United States Pharmacopœia, classified according to the character of their active or medicinal constituents. The relation they sustain to different menstrua, and to each other will be considered, and whenever practicable, the method of their preparation will be demonstrated, the aim being to apply the theories and general principles taught in the Junior course.

The concluding lectures of the course will be devoted to extemporaneous pharmacy—such as the preparation of emulsions, pills, suppositories, solutions, ointments, etc., and the dispensing of physicians' prescriptions.

The adulteration and sophistication to which official preparations are subject, and the methods for their detection, will be noticed to the extent which their importance may demand.

THE COURSE IN CHEMISTRY.

PROFESSOR ANDREWS.

The Laboratory work will be divided into two distinct courses, both of which are requisite for graduation, but only one of which can be taken by the student during either of the two college years.

THE JUNIOR COURSE

Comprises instruction in the general principles of Chemistry and in qualitative analysis, arranged with special reference to pharmaceutical preparations.

The lectures elucidate the fundamental laws of the science, demonstrating them, whenever possible, by numerous experiments performed before the class. The chief metallic and non-metallic elements, with their more important compounds and reactions, are considered. The practical application of the principles of chemical calculation, by which the composition of compounds may be deduced from their formulas, in consequence of its great importance to the practitioner, is carefully inculcated. Instruction in details of the work, and in matters of manipulation is conveyed in the laboratory course, which occupies, on an average, seven hours a week. Here the student is taught by a systematically arranged series of experiments the properties of the commonest chemical agents, and how to handle chemical apparatus properly. When some manipulative skill is attained, qualitative analysis is taken up. The characteristic reactions of bodies as applied to their detection in mixtures are made familiar in a series of examples, beginning with the simplest substances, and passing gradually to the most complex, such as are met with in the practice of Pharmacy. The student is expected at the conclusion of this course to be able to test the purity of official preparations and to detect the nature of any adulteration which may be present. He is required to pass a practical examination covering this ground.

THE SENIOR COURSE.

Quantitative analysis is taken up, particular emphasis being laid upon volumetric processes, as these, by virtue of the ease and rapidity with which they are executed, are of the greatest general usefulness.

Practice is given in the valuation of numerous inorganic and organic pharmaceutical preparations, and in the methods of controlling or determining their exact strength. A practical examination concludes the course. Instruction in Toxicology is offered during the Senior year to those who desire it.

THE COURSE IN BOTANY AND PHARMACOGNOSY.

PROFESSOR MCBRIDE AND INSTRUCTOR SHIMEK.

In these subjects three courses are offered, one in Botany and two in Pharmacognosy:

COURSE I. General Botany. The first part of the course is devoted to a careful study of the elements of the Science. The various organs of the plant are reviewed and the local autumnal flora is made to afford abundant material to illustrate, in the hands of the student, the morphology of roots and stems and leaves, as well as the ordinary principles of floral analysis, and the means of specific identification. The second part of the course is devoted to an inquiry into the life and growth of the plant; the cell, its morphology and products; the morphology and structure of the entire plant; structure as a means of identification. These and similar topics are made the basis of a course of lectures illustrated by means of the microscope and stereopticon.

Fall. Instructor SHIMEK. One hour per day for the first six weeks; one hour per week thereafter.

COURSE II. Pharmacognosy. This course is intended to present the organic *Materia Medica* from the standpoint of the biologist, with a view to enabling the student to handle his material intelligently, and to identify them in accordance with the recognized principles of biologic science. The various drugs of organic origin are taken up in the order of their natural classification, the principal facts as to their nature, origin and preparation are set forth in a series of lectures illustrated by abundant material in original packages, as well as by herbarium specimens (in the case of plants), charts, drawings, microscopic preparations, etc.

Winter. One hour per week, commencing about November 1st. McBRIDE.

COURSE III. Microscopic Technology. This course is intended for Seniors only. It includes instruction in the use of the compound microscope, and its employment in the investigation of vegetable structures. The student is supplied with an instrument and all necessary reagents and apparatus, and is taught the various modes of cutting, staining and mounting histological preparations. Practical instruction is given in the use of the microscope in the identification of crude drugs as well as in the detection of adulteration. Each student taking this course prepares at the laboratory for his own use, a cabinet of microscopic slides, illustrative of many of the more important officinal drugs.

Winter. Two hours per week. Professor McBRIDE and Instructor SHIMEK.

Reference text books:—

Wood's Class Book of Botany.

Gray's Manual of Botany.

Flückinger's Principles of Pharmacognosy.

Maisch's *Materia Medica*.
Bentley and Trimen's *Medicinal Plants*.
Milsbaugh's *American Medicinal Plants*.
The National Dispensatory.
The United States Dispensatory.

THE COURSE IN MATERIA MEDICA.

PROFESSOR CHASE.

Both the inorganic and organic *Materia Medica* will be presented to the students of the Junior class by lectures supplemented by careful drill in recitation once each week during the entire session. The professor in charge will also specially present to students in the department, a careful synthetic and analytic course in prescription writing and interpretation as well. Both the common and Metric systems will be employed, in order that the student may be made familiar with the various methods.

The official preparations will be considered in detail, with all necessary allusions to the physiological actions and medicinal uses of the more common and important drugs of the *Pharmacopeia*.

A special effort will be made to teach the student to familiarize himself with all forms of incompatibility, with a view to detection at sight of improperly written prescriptions. This knowledge, it is believed, is of vital importance to the pharmacist.

The student will also be carefully drilled in dosage, alkaloidal substances, toxicology, antidotes, etc., etc. In a word it is the aim of this chair to make the subject of *Materia Medica* eminently practical in all its bearings upon the practice of the profession of pharmacy.

THE COURSE IN TOXICOLOGY.

PROFESSOR ROCKWOOD.

The course consists of one lecture per week during the entire session. The general action of poisons is first considered, then the most important ones are treated separately. Their physical properties and chemical action are noticed, together with their uses, and most common sources as toxicological agents. The symptoms of the different classes are given and the treatment for each. Especial attention is paid to antidotes. Methods of testing suspicious substances, as well as the examination of secretions and excretions, are explained and illustrated by experiments.

PHARMACEUTICAL LABORATORY.

PROFESSOR BOERNER.

The pharmaceutical laboratory, provided with the necessary conveniences, apparatus, and material for thorough practical instruction, will be open daily during the greater part of the school year. The instruction will embrace practice in the use of thermometers, hydrometers, specific gravity bottles, and balances; the preparation of tinctures, syrups, oleo-resins, solid and fluid extracts, pill masses, compound powders, solutions, hypodermic and compressed tablets and many chemicals such as the official iron solutions, scale salts of iron, mercury and lead compounds, which the apothecary should and can prepare for himself, both with advantage and profit; extemporaneous pharmacy, including the preparation of emulsions, pills, plasters, suppositories, prescriptions, the application of pharmacopoeial tests the manufacture of handkerchief extracts, colognes, sachet powders, etc.; in short, practice in all the varied duties of a first class pharmacy. The greatly improved facilities of the new laboratory building will permit of the introduction of work found impracticable for preceding classes.

Instruction in this branch is now looked upon as one of the utmost importance in pharmaceutical education, especially as much of the work formerly conducted entirely by the apothecary is now in the hands of large manufacturing establishments, and the student in pharmacy is thereby deprived of many valuable opportunities for gaining the necessary experience and self-confidence in drug stores, which a personal acquaintance with the various manipulations is sure to bring about. The instruction in this laboratory will be individual; the progress made will therefore depend upon the student's knowledge and exertions.

All students desiring to graduate in this school are required to pursue this course during the Junior and Senior years.

Students will be furnished with all necessary apparatus and material, but will be required to pay for all breakage or damage to apparatus while in their possession.

FEES.

JUNIOR.

Matriculation (paid only once).....	\$ 5.00
Lecture ticket, one full session.....	36.00
Pharmaceutical Laboratory Course.....	20.00
Chemical Laboratory Course.....	10.00
Total.....	<u>\$71.00</u>

SENIOR.

Lecture ticket, one full session.....	\$36.00
Pharmaceutical Laboratory Course.....	20.00
Chemical Laboratory Course.....	10.00
Graduation	10.00
Total.....	\$76.00

Students may matriculate in advance of their coming, by sending the matriculation fee to W. J. Haddock, Secretary of the University.

Women are admitted on the same terms as men.

The above statement of fees is now in effect, and will be understood to apply to all students in the department, entirely irrespective of the date of matriculation.

All fees, including the examination fee, must be paid at the beginning of the session to the Secretary of the University, William J. Haddock.

In case any student is unable to pay the fees at the proper time, he may, on application to the Dean of the Department, be granted an extension of time not to exceed thirty days from the opening of the session.

All students who do not pay the proper fees or avail themselves of the provision above mentioned, will be suspended from the department until such fees are paid.

QUALIFICATIONS FOR GRADUATION.

Every person upon whom the diploma of this department is conferred must be of good moral character; have arrived at the age of twenty-one years; have attended two full courses of lectures, the last one of which shall have been in this school, including two full courses of pharmaceutical, microscopical, and chemical laboratory practice; produce evidence of having had an experience of at least four years (inclusive of the time spent in college), with some person or persons qualified to conduct the drug and apothecary business, at least three years and six months of which must have expired before the examination; and pass a satisfactory written examination in all the branches taught in this school, when he shall be entitled to the degree of Graduate of Pharmacy (Ph. G.).

FINAL EXAMINATION

The examination of candidates for graduation will take place during the week preceding the close of the lecture season.

WEEKLY EXAMINATION.

As auxilliary to the lectures, the professors will hold frequent quizzes in their respective departments, to serve as reviews of the subjects discussed in the lectures.

TEXT BOOKS.

Pharmacy—U. S. Pharmacopœia, Remington's Practice of Pharmacy, National Formulary, Lyon's Pharmaceutical Assaying (for Seniors).

Chemistry—Andrews' Qualitative Analysis, Remsen's Chemistry, advanced course.

Pharmacognosy—Maisch's Organic Materia Medica.

Materia Medica—White & Wilcox's Materia Medica and Therapeutics.

Botany—Gray's or Wood's Manual, Bastin's College Botany.

REFERENCE BOOKS.

National Dispensatory, U. S. Dispensatory, Fresenius' Analytical Chemistry, Hoffman and Power's Examination of Medicinal Chemicals, Gray's Botanical Text Book, Vol. II.

BOARD.

The cost of board in clubs is from \$1.50 to \$2.50 per week; in private houses from \$2.50 to \$4.00 per week. Rooms can be obtained at from 50 cents to \$1.50 per week for each student.

LIBRARIES.

The libraries of the University number in the aggregate about 30,000 volumes. The general library contains 25,000 volumes, and is accessible to students of all departments during eight hours of every week day. Books may also be drawn for outside use.

Nearly seventy American and European periodicals are taken, and are kept upon the tables of the reading room throughout the year.

For further particulars address the Dean, Emil L. Boerner, Iowa City, Iowa.

STUDENTS.

SENIORS.

NAME.	RESIDENCE.
Bernhardt, John Matthew	Cassville, Wis.
Bunting, Mrs. F. M.	Rock Valley.
Coppock, Wood Remington	Woodburn.
DeLespinasse, Adolph Frederick Henry	Orange City.
Doyle, William Joseph	Davenport.
Griffin, Charles Francis	Mapleton.
Knapp, Georgiana	Hull.
Miles, Clarence Wheeler	Charles City.

JUNIORS.

NAME.	RESIDENCE.
Bartlett, William Samuel	Burlington.
Brown, James White	Morning Sun.
Butler, Jesse Davenport	Clarinda.
Chesebro, Nellie	Jesup.
Comer, William	Northville, S. D.
Cowlham, Warrington	Vail.
Cruikshank, Walter Lee	Leon.
Day, Verne Robert	Indianola.
Fellows, Ed	Leando.
Finn, William George	Belmond.
Foster, Charles Azariah	Washington.
*Gibbons, Charles Dashiell	Lacona.
Gilmore, Harry Noble	Vinton
Haag, Arthur Marion	Bevington.
Holt, Edward Sales	Anamosa.
Imholtz, Joseph Ferdinand	Dyersville
Jester, Lula Beall	Sweetland.
Johnson, Elton Mayrant	Cambridgeboro, Pa.
Jones, Abner Fay	Mechanicsville.
Kallam, James Loren	Tama.
Kent, Charles Wesley	Hampton.
Kirkpatrick, John William	Wellman.
Lamson, Clyde Orin	Anamosa.
Landsberg, William Edwin	Iowa City.

*Deceased.

NAME.	RESIDENCE.
Leahy, Thomas James	Wisner, Neb.
Martin, Charles Russell	Aplington.
Moffat, John Howell	Davenport.
Rawhouser, Jerome Lee	Columbus City.
Roush, Harlow	Holstein.
Salter, Chalmer Newton	Kirkwood, Ill.
Sargeant, Frank Loring	Marion.
Sayers, Milton Cary, Jr.	Iowa City.
Schaul, Alphonse	Le Mars.
Skillin, Dolph Robert	Tripoli.
Smith, Edgar F.	Monticello.
Stover, Albert Mark	Iowa City.
Thompson, Frank Watson	Iowa City.
Tobin, Corneal	Osage.
Tyson, Earle Henry	Independence.
Ullom, Samuel Alexander	Vinton.
Watters, David	Hudson.
Waugh, Harry Buchanan	Mount Pleasant.
Wunderlich, Frank August	Dubuque.

Department of Pharmacy

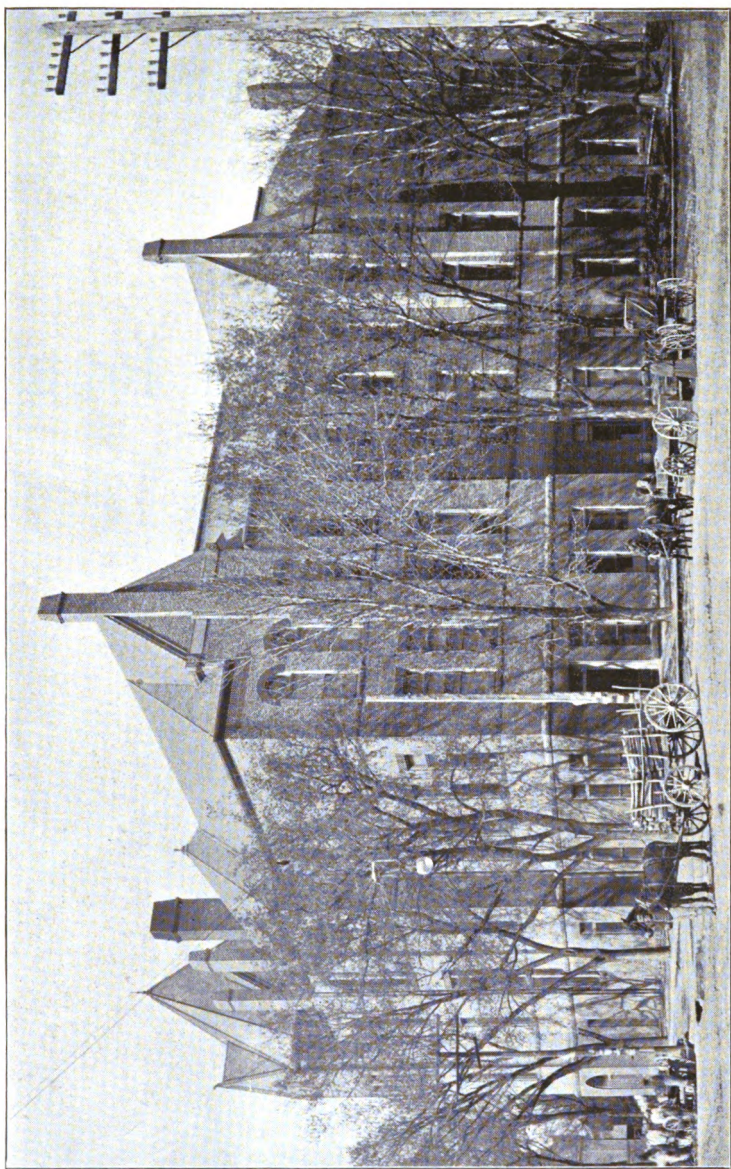
OF THE

State University of Iowa.

IOWA CITY, IOWA.

BY J. H. HARRISON.

REPRINTED FROM
THE WESTERN DRUGGIST
OF AUGUST, 1894.



CHEMICAL AND PHARMACEUTICAL BUILDING AND LABORATORY.

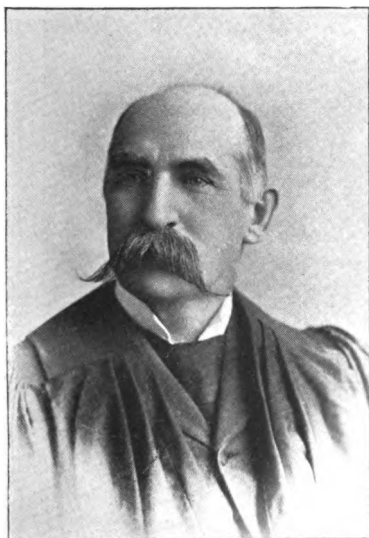
DEPARTMENT OF PHARMACY OF IOWA STATE UNIVERSITY.

(REPRINTED FROM THE WESTERN DRUGGIST.)

Side by side, and cowering with the science of medicine in the benign business of ministering to human ills, the profession of pharmacy is moving to-day in the forefront of human progress.

The prime necessity of technical education as a foundation for usefulness and success is widely recognized, and the fidelity of her votaries to the high aims and welfare of a noble science is evidenced and encouraged by an efficient and prosperous pharmaceutical prey and by a growing appreciation and support of her teaching colleges.

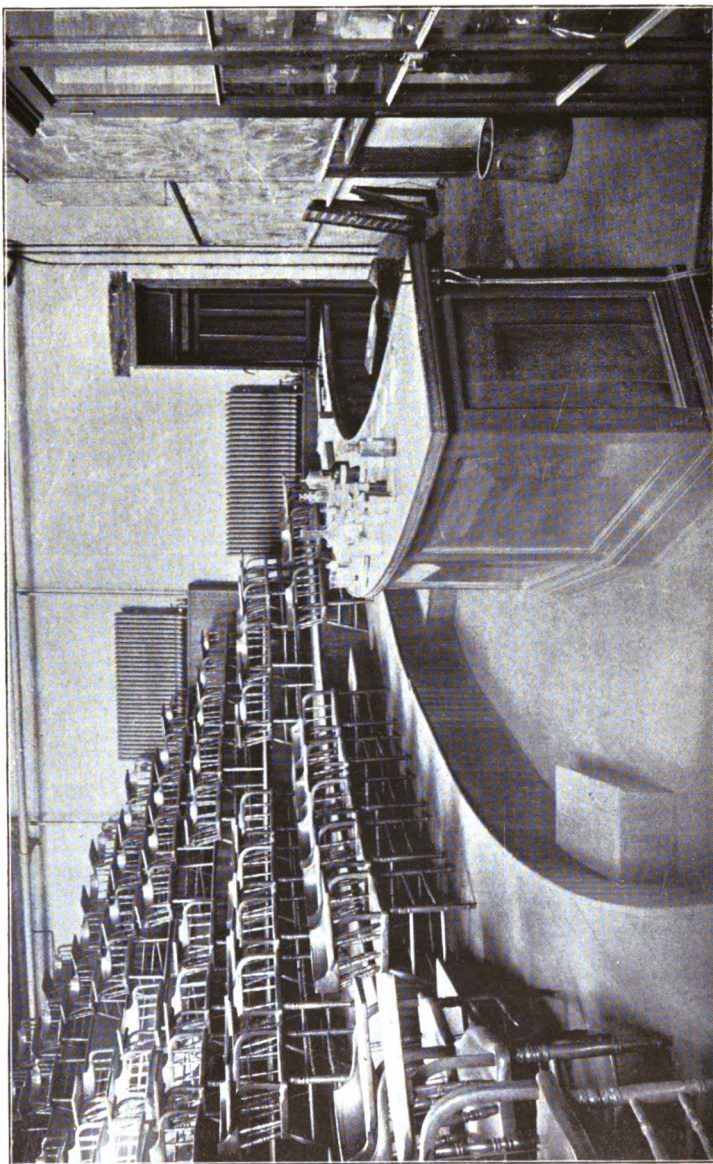
Among these institutions of learning which are occupying fields of usefulness, several of which have already been noticed and illustrated in this journal, is the Department of Pharmacy of the State University of Iowa.



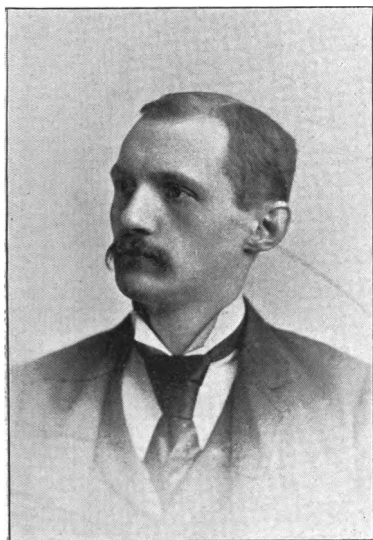
CHARLES A. SCHAEFFER,
A. M., PH. D., LL. D.,
President.



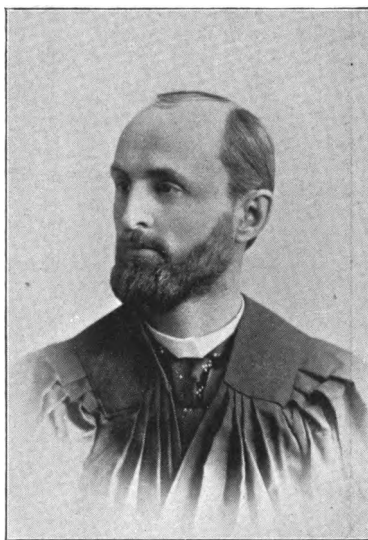
EMIL L. BOERNER, PH. G.,
Professor of Pharmacy and Dean of the
Faculty.



SECTION OF CHEMISTRY LECTURE HALL.



PERCY H. WALKER, A. M.,
Instructor in Chemistry.

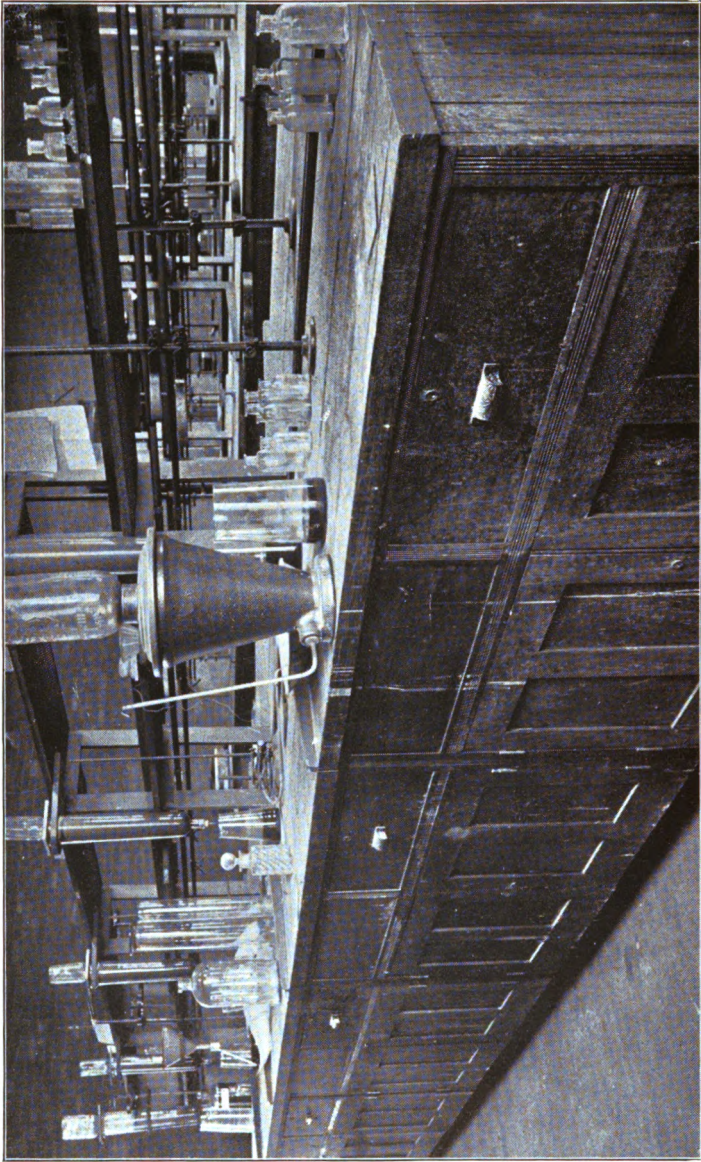


CHARLES S. CHASE, M. D.,
Professor of Materia Medica.

The honor of its beginning is accredited to the Iowa Pharmaceutical Association, and the membership of that organization has and can have no prouder record of their doings than the fostering interest which has been constantly manifested toward this educational offspring.

Established so late as 1885, its organizers and promoters determined to profit by the experience of older and well established schools, to appropriate and utilize the best-known features and facilities for thorough teaching, and to build at Iowa's capitol of learning, in one of the queenliest little cities of the West, a school of pharmacy worthy of an enlightened state and its great university, an honor to the craft and a positive power in the uplifting and advancement of a noble calling.

That the fruition of these plans has been practically accomplished within the period of one decade is justly a matter of pride, and is attributable to the devoted service of competent instructors, to a wise and helpful executive direction and to a broad and liberal co-operation of the board of regents.



SECTION OF PHARMACEUTICAL LABORATORY, SHOWING INDIVIDUAL TABLES.

The history of the department is substantially that of most successful schools. Established upon the sure foundation of manifest need, it has grown up from a small beginning, when accommodations, appliances, and means were limited, with sometimes something of vicissitude in its career, but with never a backward step, always growing, broadening, strengthening.

Of the institution as it is to-day, which is more surely of interest and concern to the reader, or at least of some of its principal features, we propose to speak.

Homed chiefly in the splendid new Pharmaceutical and Chemical building, with every conceivable convenience and aid for imparting practical instruction, the school is admirably situated and conditioned for effective work.

The stately and substantial edifice is wholly modern, that is to say, is broadly planned and builded upon modern lines, suggested by the highest types of practical experience and construction; herein is evidenced the forethought and wisdom of the regents, who, previous to the adoption of plans for the proposed structure, and determined



THOMAS H. M'BRIDE, A. M.,
Professor of Botany.



BOHUMIL SHIMEK, C. E.,
Instructor in Botany.



VIEW OF GENERAL CHEMICAL LABORATORY.



LAUNCELOT W. ANDREWS, PH. D.,
Professor of Chemistry.



E. W. ROCKWOOD, A. M.,
Lecturer on Toxicology.

that it should be in all respects "up to date," sent Prof. Boerner, dean of the faculty, as special commissioner to visit the principal schools and laboratories, east and west. That his observations and notes, together with the practical knowledge of the several professors, greatly aided the architect goes without saying, and the completed pile is believed to be the largest and best arranged of its kind in use.

Noticeable are the spacious dimensions of every apartment; broad areas of floorage, high ceilings, and abundance of light prevail, and delightfully contrast with the cramped and ill-conditioned quarters of less favored colleges; about 25,000 square feet of floor space is comprised in the thirty-two rooms of the structure, devoted to pharmacy and chemistry.

The heating apparatus, boilers, engines, and dynamos are conveniently placed in basement rooms, so that everywhere, from the top floor down, hot and cold water, gas, heat, light, and power are subject to the command of the diligent student.

Two large lecture rooms there are, with modern tables, chairs, and lecture tables provided with every device to aid in giving practical

instruction; one of these is in form of amphitheater, with a capacity for nearly 200 students, and having raised seats, the lecture table is in plain view of all.

Of the many commodious and admirable apartments for specific uses which the great building provides, probably most worthy of mention are the two large general laboratories for chemistry and pharmacy, for here, under the training system which prevails, the student devotes by far the larger number of his school hours, having the immediate direction and tutorage of the professors and assistants in verifying and learning by that most effectual of all methods, *actual practice*, the various tenets, teachings and principles, in order as they are unfolded to him in the lecture-room and text-books.

In the pharmacal laboratory on the second floor each student has entirely to himself a table $2\frac{1}{2}$ by 4 feet, with live steam, water, gas, and necessary shelving, and beneath it large cabinet and drawers, with requisite utensils and apparatus.

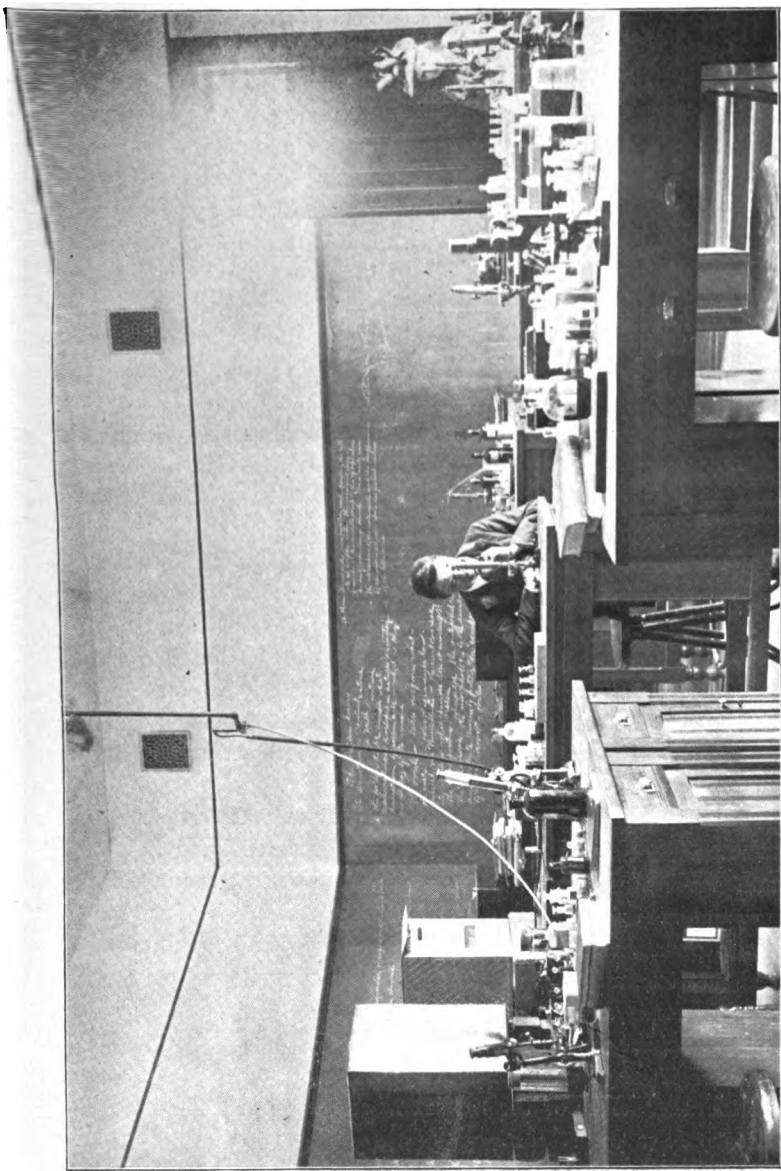
The extra amount of laboratory practice, with accompanying personal supervision and instruction which the student has, is, indeed, the prominent feature which distinguishes this school from others of the best class and this advantage will continue. The laboratories being each 27 by 100 feet, and fully outfitted, there will be ample accommodations for the largest classes working full time, as now, for years to come.

Adjoining that just mentioned is a smaller laboratory for advanced pupils and for special work, fully equipped with apparatus and implements necessary for the higher educational practice. Adjacent, also, on the same floor is the stock dispensary, where all drugs and medicines are readily obtained for use.

Passing, for sake of brevity, several of the ten rooms utilized by the pharmacy class we find on the floor below about 8,000 feet of floor in subdivisions, devoted to chemical instruction and practice.

The large general laboratory is of the same dimensions as the pharmaceutical, already described (27 by 100 feet), and like it is lighted from one side only, by ten large windows, is fitted up in the same complete and commodious manner, with large tables, draft flues, and every facility and convenience for practical work.

Not only is the entire building of perfect construction as to light, ventilation, convenience, and adaptation, but its appointments, are



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most complete; every department is unstintingly supplied with implements and instruments, balances and weights of precision, microscopes and accessories, chemical ware, library well supplied with reference books, text-books, periodical literature, etc.

Collateral branches, as materia medica, toxicology, microscopy, pharmacognosy, and botany are fully cared for and taught in other buildings.

The botanical department in Science building has large lecture-room and laboratory, and is fully equipped. The latter will accommodate twenty-eight students at one time, each with a compound microscope, accessories, and reagents.

A dark room with necessary apparatus for micro-photography is provided, and of the five smaller laboratories for advanced students two are given to bacteriological research.

The herbarium, occupying one large and one small room on the same floor with the laboratories and lecture-room, is in many departments of great completeness, containing about 50,000 specimens from almost every section of our own and other countries.

Constant additions are being made through expeditions organized and supported by the university, and from many other sources.

Thus fully provided with every essential requisite to aid and facilitate educational work, the regents have made sure the foundations of success, and successful work by establishing in the several chairs, professors and instructors not only of the highest attainments, each in his special science, but all of great practical experience in the art of teaching.

With a curriculum as thorough and complete as that of the best of the older schools, with a corps of professors generously giving personal and unusual attention and instruction to students employed for full time, and with rigidly exacting the fullest qualifications for graduation, it is certain that this western school will easily maintain its advanced position, and the discriminating young men and women of the West pharmaceutically inclined, who examine and compare, who seek a model school, an ideal location for study, with beautiful and agreeable surroundings, will not fail to discern and avail themselves of the superior advantages of the Department of Pharmacy of the State University at Iowa City.